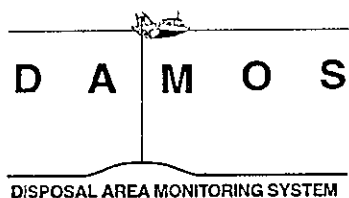

Style Guide
for the Preparation
of DAMOS Documents

Disposal Area Monitoring System DAMOS



June 1996



US Army Corps
of Engineers
New England Division

**STYLE GUIDE
FOR THE PREPARATION
OF
DAMOS DOCUMENTS**

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EXECUTIVE SUMMARY

An important aspect of the Disposal Area Monitoring System (DAMOS) Program consists of reporting disposal site monitoring survey findings. Increasingly, reports of these results interest nontechnical readers as well as those from the traditional scientific and technical community. To communicate effectively to this diverse audience and to present a recognizable style, we have adopted a number of stylistic conventions in writing DAMOS reports.

This style guideline introduces the particular conventions that the US Army Corps of Engineers (USACE) New England Division (NED) requires in writing DAMOS documents. We have attempted to anticipate writers' needs and to accommodate diverse composing habits while at the same time ensuring a uniform and recognizable look for these reports. This style guide attempts to

- Explain standard report formats
- Present technical guidelines to shape the writing of individual report sections
- Detail grammar and usage conventions
- Offer descriptive formats for developing graphics
- Describe the procedures to follow in generating a DAMOS report.

Samples of effectively written report sections are also provided. Quick Reference Style Sheets are included to allow time-saving access to common questions as well as to foster effective communication between our group of writers and reviewers. Following the guidelines outlined here should bring uniformity to future DAMOS documents.

1.0 INTRODUCTION

Management of the open ocean disposal of dredged material in New England is provided by the Disposal Area Monitoring System (DAMOS) Program. Reporting results of disposal site field monitoring surveys is an important part of the program's overall management plan. Information that pertains to the maintenance of a healthy marine environment is of interest to both technical audiences and, increasingly, to the general public as well. As a writer, your task is to communicate the results and implications of your research to your readers as clearly and concisely as possible.

Such writing is hard work. Attempting to offer your conclusions and best insights to an audience in a way that generates understanding and allows true communication of your message can seem daunting. The task is further complicated when following conventions in your field of science and technical writing is required. The need to present a consistent and recognizable style for all the documents written by a group of writers only adds to the dilemma.

This style guideline outlines the conventions that we have adopted in writing DAMOS documents. Some of these conventions may require you to make changes in your writing habits. Section 2.5 "Tables and Figures" introduces new information on displaying data, and Section 2.6 "References" details changes in referencing source material. Section 5.0 "Developing Graphics" has also been extensively revised. You will find other new ways of organizing material as well.

Making these changes will simplify your writing tasks and give DAMOS reports a uniform and identifiable look. In the Appendices you will find Quick Reference Style Sheets which should save you time when writing and reviewing reports. Blank Quick Reference Style Sheets can be used when writing new reports to note questions and inconsistencies you wish to submit to your technical editors. This is also the place to build a case for any future stylistic changes you as a writer feel need to be made. Section 4.11 "Supplementary Texts" lists additional style manuals for you to consult should this guide not provide sufficient information for any particular writing concerns you might have. It also contains other reference texts we prefer to use.

DAMOS reports must follow a standard format which has been established by the US Army Corps of Engineers (USACE), New England Division (NED). There are now two categories of DAMOS reports: standard reports and special technical reports. Standard reports are written for monitoring surveys and are submitted to NED for publication as DAMOS Contributions. Special reports are written for a variety of purposes

and may have particular requirements. The standard DAMOS report is the format you will use most frequently. The primary focus of this style guide therefore is on how to prepare a standard DAMOS report.

This guideline is written on the assumption that the author is composing directly on a computer, not writing text out longhand first. It has been prepared following the standard DAMOS report format to serve as an example of the way a report should look when it is given, on disk, to the production department for final formatting and production.

The guideline is divided into several parts: Section 2.0 gives details on the report format, Section 3.0 provides advice on the technical aspects of preparing a DAMOS report, Section 4.0 lists helpful hints on the myriad nuances of DAMOS reports, and Section 5.0 serves as a detailed primer for generating graphics. The four appendices at the end of the manual provide examples of report text, a sample report tracking form, style sheets for quick reference, and examples of graphics.

The author of a report is responsible for writing the main body of the report, references, and table and figure legends. The author is also responsible for the technical content and correctness of all tables, figures, or other ancillary report materials. The production department will be responsible for generating the cover page, table of contents, list of tables, list of figures, and index. In order for everyone to learn the proper format (so that authors and editors can do a final QA/QC check on their reports), the following sections detail how the cover page, table of contents, list of tables, list of figures, executive summary, table titles and headings, and figure captions and legends should look.

2.0 STANDARD FORMAT FOR REPORTS

A report will be structured in the following order:

- Cover Page
- Table of Contents
- List of Tables
- List of Figures
- Executive Summary
- Report Body (actual text, which typically consists of the Introduction, Methods, Results, Discussion, Conclusions, and References sections).
- Tables (integrated in text or, in certain reports, in sequential order)
- Figures (integrated in text or, in certain reports, in sequential order)
- Appendix or Appendices (when applicable)
- Index (generated by the production department)

The proper formats for each report section are presented in the following sections. Note that each major section (1.0, 2.0, 3.0, etc.) starts on a new page. Figures and tables are integrated in the text after their first mention. Examples of most sections are found in Appendix I. Section 2.8 details the differences between “draft” and “final” DAMOS reports.

Note that we use CG Times 12.5-point font for text in DAMOS reports. Tab stops are standard half inch tab stops. Footers and report body page numbers are in CG Times 10-point italicized font.

2.1 Cover Page

The production department will prepare the cover page for a report. The person who writes the report must provide the production department with the following

information: report title, contract number, and work order number. This information should be present on the DAMOS report tracking form; therefore, be certain to keep this sheet up-to-date (see the example in Appendix II). The production department will assign the document an SAIC report number.

A sample cover page is provided in Appendix I. Note that this cover page has the following information:

- The report title, which is positioned on the page in such a way that it will appear neatly centered on the SAIC report cover. This information should all be **CAPITALIZED AND BOLDED**.
- The date of the original (draft) report submittal and the date of submittal of the final report (when a draft report has been revised), on separate lines, no bold, not all capitals.
- The contract number, the work order number, and the SAIC report number (on separate lines, no bold, not all capitals).
- Who the report is **Submitted to:**, who the report is **Prepared by:**, and who the report is **Submitted by:** (usually NED, the SAIC staff scientist, and SAIC, respectively). The words "Submitted to:," "Prepared by:," and "Submitted by:" should be **BOLD** with the first letter only capitalized.

2.2 Table of Contents, List of Tables, and List of Figures

The first Table of Contents page begins with a lowercase, italicized, 10-point Roman numeral ii, and this numbering sequence continues through the final executive summary page. The titles of these sections should be centered, in capitals, with a margin-to-margin baseline.

The word "Page" (first letter only capitalized) should be placed two lines below the baseline. Section heading numbers (1.0, 2.0, etc.) should be flush left, section heading text tabbed once. Subheading numbers should also be tabbed once. Subheadings should be tabbed twice. Both the heading "Index" and "Appendix" should be flush left. There should be two lines between each section heading. The corresponding page numbers will appear flush right preceded by a dot leader. See Appendix I for a sample Table of Contents.

The first sentence (or noun phrase) of each figure caption or table title will provide the text for the List of Tables or List of Figures. These lists should all be formatted to appear exactly as they do in the samples found in Appendix I. Table titles in the List of Tables are capitalized headline style (major words only capitalized). Figure captions in the List of Figures however are capitalized sentence style (first word and proper nouns capitalized). Do NOT punctuate entries in either list with a final period. Notice that, when the List of Tables or List of Figures continues onto one or more pages, the subsequent heading should be: LIST OF TABLES (continued) or LIST OF FIGURES (continued).

2.3 Executive Summary

The indented, single-spaced paragraphs are not numbered, even in the draft report. An example Executive Summary is included in Appendix I.

2.4 Report Body

The first page of the report body (usually the page with the introduction) is numbered with Arabic numbering, placed in the upper right-hand corner. These numbers will be italicized, 10-point, and encased in two margin-to-margin baselines. All section headings (i.e., 1.0, 2.0, etc.) should be bold, uppercase, and numbered sequentially. The number of both section headings and subheadings (1.0, 1.1, 1.2, 2.0, 2.1, etc.) should be flush left, followed by one tab, and then the heading or subheading. All headings other than major section headings (1.0, 2.0, 3.0, etc.) have initial capitals only. Therefore, 1.2 is labeled Cover Page. The maximum number of section level headings for standard DAMOS reports is four (2.1.1.1, for example). All paragraphs should also be indented one tab. There should be two blank lines between the end of one section and the heading of the next section, followed by one line, followed by the first paragraph of the next section. When two headings appear at the beginning of a section (e.g., a major heading and a subheading), the following rules apply: two blank lines between the end of one section and the major heading, followed by one blank line, followed by the subheading, followed by one blank line, followed by the first paragraph. All headings are bold. A sample first page of a report, which illustrates these rules, is provided in Appendix I.

2.5 Tables and Figures

There are a number of ways to display data in DAMOS reports. For our purposes, tables are rectangular arrangements of quantities in rows and columns. Use tables when relationships in data are quantitative rather than qualitative and when exact values are most

important. Figures may include charts, graphs, photographs, diagrams, and illustrations. In most DAMOS reports, both tables and figures are integrated with text in the body of the report.

Certain general guidelines apply to both tables and figures. When writing table titles or figure captions, keep your caption to one sentence in length, with a subheading (placed in parentheses underneath the title) to indicate such information as sample size if necessary. The caption should not repeat information found in the text, and it should not provide explanatory or background information. Unless you are writing primarily for a nontechnical audience (see Section 13.25 in *Science and Technical Writing: A Manual of Style*), your caption should not express conclusions you have drawn from the data. Write the caption as a noun or noun phrase. Use participles rather than relative clauses when writing captions. Thus, "Dredged material disposal at NLDS, 1986-1990" is preferable to "Dredged material that was disposed at NLDS, 1986-1990."

Capitalization and punctuation are important details in tables and figures. The particular conventions we have chosen to follow in DAMOS documents are outlined in the following sections. Note that for the sake of readability we do not use all capitals for titles, headings, and text in data displays.

2.5.1 Tables

Tables are referenced in the text and **numbered according to the section in which they appear**. For example, Table 3-1 is the first table referenced in Section 3.0, followed by Tables 3-2, 3-3, etc. Section 4.0 would have Table 4-1, 4-2, etc. In order to discuss the style conventions that apply to tables, it is necessary to define the various parts of a table. The title or caption should identify the table briefly. In the actual table, the title should appear at the top of the page as follows:

Table 3-1

Results of Physical Testing of Sediments Collected
at CLIS, August 1987

Note that "Table 3-1" is centered and bold, followed by one blank line before the table title. The table title has major words only capitalized (this is called headline style); it is also centered and "symmetrical" on the page. There is no period after the table title. You may decide to make the table in either vertical or horizontal format, depending on the

amount of information and how it is best conveyed. If a table takes more than one page, the additional pages should be headed: **Table 3-1, continued**.

A table must have at least two columns and usually has more. The columns have headings at the top which briefly identify the material in the column. Capitalization of headings should match that of the table title (headline style in DAMOS documents). Thus, "Grain Size" is preferred to "Grain size" as a table heading in DAMOS reports.

The left-hand column of a table is known as the stub. It is a vertical listing of categories. If the stub has a heading, capitalize the heading in headline style. Capitalization of items in the stub of a table, however, should be sentence style (first word and proper nouns only capitalized). No periods are used at the ends of items.

The body of a table refers to the vertical columns to the right of the stub and below the column headings. Follow the same conventions as in the stub when capitalizing and punctuating items in the body of a table (sentence style, no periods).

2.5.2 Figures

Following the same convention used with tables, figures are referenced and usually integrated in the text and numbered with Arabic numbers according to the section in which they appear. Therefore, Figure 3-1 is the first figure referenced in Section 3.0, followed by Figures 3-2, 3-3, etc. Figure 4-1 is the first figure referenced in Section 4.0, etc. Note that the word "Figure" is always spelled out and the first letter capitalized. The figure number is followed by a period. Figure captions or legends will be formatted as follows:

Figure 3-1. Locations and designations of REMOTS® stations at the New London Disposal Site, August 1989

Note: "Figure 3-1." is flush left and bold, followed by the figure caption or legend, which is indented after the period following "3-1". Use the Microsoft® Word indent feature (Ctrl+T). Only the first letter of the first word and of proper names are capitalized in the caption or legend (sentence style capitalization).

Whether or not to include terminal punctuation (a period) depends on the type of explanatory material you have chosen to accompany the figure. If the material is actually a headline (called a figure caption), then do NOT follow the caption with a period.

Figure 4-2. Barge release locations at CADS, 1988

However, if you are including an explanation that is more than a headline or title (generally a statement and therefore in sentence form), the material is called a figure legend, and it should include terminal punctuation. In this case (in which you may actually have both a figure caption and a figure legend), a period follows every sentence or sentence fragment.

Figure 4-6. Three-dimensional bathymetric plot of CADS 1990 survey. The location of the plot in relation to disposal site boundaries and buoy locations is found in the insert.

It is helpful to write the figure captions and/or legends during the writing of a report as each figure is referenced. This saves time and effort down the road and helps you keep track of the figure numbers. Save the figure legends and captions as a separate file on your floppy disk (see below for example filenames). The file which has all the figure legends and captions can then be formatted for final printing once the text is finished. The figure caption and legend file will also be used to generate the "list of figures" which appears at the beginning of the report. The report disk given to the production department for final formatting should therefore always have a file containing all of the figure captions and legends.

2.6 References

References should follow the specifications indicated in the examples below. Literature cited in the text follows the name-and-year system. The author(s) name(s) and the year of publication are enclosed in parentheses. Use the following guidelines:

- one author (Smith 1990)
- two authors (Smith and Jones 1992)
- three or more authors (Smith et al. 1992)

You will note that these examples reflect a change in the way we are citing references. We will now format references according to the recommendations of the American National Standard for Bibliographic References ANSI Z39 29-1977, which is the format used and explained in the *Council of Biology Editors Style Manual*, listed in Section 4.11 of this guide and available to you in our scientific and technical writing library collection. You will find one exception from the examples in the *CBE Style Manual*: As that manual's editors indicate, the ANSI publication allows flexibility in the placement of the publication date and in using periods after authors' initials or a journal abbreviation. In DAMOS

reports, place the date of publication of the text **after the author(s) name(s)**, rather than at the end of a bibliographic entry. Include periods after authors' names and after journal abbreviations, except after those that are actually acronyms.

Remember that spacing, punctuation, and capitalization are important details! Note that there is one space between each part (author, publication date, title of article, etc.) of a bibliographic reference. Leave one space between an author's initials in the reference (for example, Smith, C. K.). Consult the CBE Style Manual for any additional questions you might have, or use a blank Quick Reference Style Sheet to query your editors.

One author, journal article :

Biernbaum, C. K. 1979. Influence of sedimentary factors on the distribution of benthic amphipods of Fishers Island Sound, Connecticut. J. Exp. Mar. Biol. Ecol. 38:201-223.

Mills, E. 1967. The biology of an ampeliscid amphipod crustacean sibling species pair. J. Fish. Res. Bd. Can. 24:305-355.

(Notice in the preceding references that only the first letter of the first word is capitalized and the first letters of any proper names, e.g., Fishers Island Sound. In all references, all lines after the first line are indented 5 spaces.)

Two authors, journal article:

Emerson, D. J.; Cabelli, V. J. 1982. Extraction of *Clostridium perfringens* spores from bottom sediment samples. Appl. Environ. Microbiol. 44:1144-1149.

Three authors, book:

Parsons, T. R.; Maita, Y.; Lalli, C. M. 1984. A manual of chemical and biological methods for seawater analysis. New York: Pergamon Press.

Article in a book:

Johnson, R. G. 1972. Conceptual models of benthic marine communities. In: Schopf, T. J. M., ed. Models in paleobiology. San Francisco: Freeman, Cooper & Co. pp. 149-159.

DAMOS draft report:

SAIC. 1989. Monitoring surveys at the New London Disposal Site, August 1985–July 1986. SAIC Report No. 284. Draft report submitted to US Army Corps of Engineers, New England Division, Waltham, MA.

DAMOS final report:

SAIC. 1989. Monitoring surveys at the New London Disposal Site, August 1985–July 1986. SAIC Report No. 284. Final report submitted to US Army Corps of Engineers, New England Division, Waltham, MA.

DAMOS Contribution:

SAIC. 1989. Monitoring surveys at the New London Disposal Site, August 1985–July 1986. DAMOS Contribution No. 60 (SAIC Report No. 284). US Army Corps of Engineers, New England Division, Waltham, MA.

2.7 Index

The index is created only for the final report. This will be prepared by the production department.

2.8 General Report Preparation Procedures

2.8.1 Preparing Draft DAMOS Reports

A draft DAMOS report (the initial submission) should be double spaced, with paragraphs numbered sequentially. Also, prior to submitting a report for internal technical review, the author should be sure to spell-check the document.

Technical review of the draft report will be performed only after all tables and figures are completed, so allow enough time for this step before the scheduled submission date. Under no circumstances will a draft be submitted without senior-level review. Before the report is given to the production department to be finalized, it will be reviewed by the SAIC technical editor, followed by the review of at least one senior-level scientist.

The DAMOS report tracking form has been devised to maintain a record of the review process, and it is the author's job to make sure all signatures are obtained following

each review. See Appendix II for an example DAMOS report tracking form. **THIS TRACKING FORM MUST BE MAINTAINED PROPERLY FOR EACH REPORT.** The best way to do this is to always keep the sheet with your latest report copy, beginning with the day you start typing.

Following each review, it is the primary responsibility of the report author to make any changes to the text or figures. When all the reviews are completed and the figures, figure legends, tables, and text of the report are completely revised, the report disk can be given to the production department for final formatting. As indicated earlier, this final formatting step includes generating the cover page, table of contents, list of tables, and list of figures, as well as finalizing all graphics. The production department will handle this final formatting, as well as assemble the final product and produce the required number of copies.

Normally, the work order calls for submitting five bound copies of the draft report to NED (one with original photos/color graphics, four with photocopied photos/color graphics). Two extra copies of the draft report should be made to keep in the office. It's not worth making any more copies at this point, because the report probably will be revised and finalized by NED in a few months. The original hardcopy of each draft report (containing the original printout of the text from the laser printer, the original "cut-and-paste" versions of all figures, and original photographs) is placed on file in the production department and is clearly marked "draft report."

Two copies (one original and one backup) of the floppy disk containing the report also will be placed on file in the production department when the draft report is submitted (see below for recommended filenames). The author will have given these disks to the production department already for them to finalize the draft report. The disks will be clearly labeled with the Report Title and the SAIC report number and be marked "DRAFT REPORT." The disks should have everything (tables, figure legends, text, etc.) that went into the report. When we receive the report back for editing, these disks will be used by the report author to make all the required corrections, and then they can be returned to the production department for final report formatting and production. The disks will then be relabeled "FINAL REPORT" and put back in their place.

For the draft report, the following format is recommended for filenames:

project.TXT	Main body of report; where "project" is a short name for your report.
project.SUM	Optional; use if EXECUTIVE SUMMARY is written as a separate document.

project.REF	Optional; use if REFERENCES are written as a separate document.
project.FIG	Figure captions.
project.TAB	Table captions.
TABLxx.xx	Optional; use if you create tables for your report. Replace "xx.xx" with the table number.

2.8.2 Preparing Final DAMOS Reports

A final DAMOS report (after revision) is single spaced, and the paragraphs are not numbered. We are required to submit one unbound copy of the final report to NED, with original photos/color graphics. The production department should also make at least two copies of final reports. One of these copies should have original photos/color graphics for the archive. One copy will be placed in the in-house library.

2.8.3 Proofreading DAMOS Reports

An important step in readying any DAMOS report for final review and production includes proofreading your edits and making a last format check. (Your technical editor will also check these elements in the final copy edit.) Look at the placement of tables and figures to be sure that changes made during the editing process have not resulted in errors. Be certain that all tables and figures appear after the text that introduces them. Check spacing before and after paragraphs, headings, tables, figures, and lists.

Also, be aware that your editor will look at your final edited draft to eliminate "widows" and "orphans." A widow is a single line of type that gets moved to the next page. The term orphan applies to type that gets left behind. Such type appears both visually isolated and cut off from the rest of its meaning. It may interfere with a reader's comprehension. Therefore, check the first and last lines of paragraphs and the introductory clause before a list, likely places for widows and orphans to occur.

3.0 TECHNICAL GUIDELINES

The following paragraphs outline the technical aspects of a DAMOS report. Each report section is discussed in terms of its information content and writing approach.

3.1 The Executive Summary

The executive summary should be exactly that—a brief summary. The reader should be able to read this section in under 5 minutes, and come away with an understanding of what your document is about, and what your findings are. The executive summary should be only 3-7 paragraphs long, and should cover the important points of the discussion. Take care in how you present this section, because it will be the reader's first (and perhaps only) exposure to your document. DO NOT construct the executive summary by copying sentences from the report. Make a fresh start with the reader's "need to know" firmly in mind. An example executive summary is included in Appendix I.

3.2 The Introduction

Many of our DAMOS reports detailing disposal site monitoring efforts contain similar or redundant information. However, a report should not be approached simply as an exercise in filling in the blanks from a previous year's report. Think about the kinds of information that a reader unfamiliar with the DAMOS Program would need up front in the introduction to best absorb the information to follow. Ideally, a reader-oriented introduction should

- Provide background information on the disposal site, such as its geographic location and configuration, when disposal began at the site, and how much dredged material is disposed annually.
- Tell when the most recent previous DAMOS monitoring survey(s) occurred at the site, state why the survey happened (i.e., goals of the survey), briefly describe what was done then, and detail where the disposal point (buoy) was located during the most recent disposal season (e.g., at the STNH-S mound at coordinates 40°18.3' N and 70°30.0' W) or other relevant time period (e.g., since the last survey).
- Give an estimate of the volume of dredged material disposed at the buoy during the relevant time period, and give information on its physical and chemical characteristics. (NED frequently provides this information in the work orders,

but it may be a projection.) Check the DAMOS database for total barge volumes and permit data, if available. Confirm volumes and characteristics with the SAIC DAMOS database manager, who can check with the DAMOS Program Manager if necessary.

- Supply a brief description of the present cruise (i.e., the one you're writing about) or monitoring effort: dates in the field, what was done, and so on.

It is often helpful to list the study objectives in bullet form. Try to be detailed in listing the objectives, based on what was stated in the work order as the reasons for performing each task. Also, try to work in any predictions given in the work order as part of these bullets. An example follows below:

The objectives of this cruise were to

- Determine the extent and topography of the dredged material deposit formed as a result of disposal during the 1989-90 disposal season. Based on the estimated volume of disposed material, it was predicted that the new mound would have a radius of 200-300 meters and a maximum height of 2 meters.

A big problem with many reports is that the introduction is too brief and general, lacking scope and detail. Remember, the more detailed and complete the introduction, the easier it will be to write the rest of the report (and easier for a reader to follow and comprehend).

3.3 The Methods

The methods section should be broken down into several subsections, depending on what was done (e.g., navigation, bathymetry, REMOTS®, etc.). The instrumentation and/or techniques should be briefly described, and the exact dates each was used should be given. A detailed description of a method should only be given if it is not given, or is different from what is contained, in the DAMOS SOP manual or an earlier DAMOS report. Be sure to cite the appropriate reference if a detailed description is not given.

Where appropriate in the various methods subsections, you should refer to figures showing the bathymetric or sidescan survey lanes, REMOTS® station locations, sediment grab sample station locations, etc. These figures are usually straightforward; details such as the buoy location, the disposal site boundary, north arrow, etc. are important. See

Section 5.0 “Developing Graphics” for more detail on figures and working with the production department.

3.4 The Results

In the results section, the goal is to simply state facts! You want to present these facts in a clear, concise, orderly fashion. It is important to keep in mind the objectives of the study when writing this section: some results are much more relevant than others in terms of the study objectives, and your presentation should reflect this. Some results are not relevant at all, and so they should not be presented. Don't state the objectives in the results section; just keep them in mind. Use statistics, figures, and tables whenever necessary to convey the information in the most concise and easily understood manner. The important rule is to present only those results which you will later discuss (in the discussion section) in terms of the study objectives (which you previously listed in the introduction section).

3.5 The Discussion

The discussion section is where you want to explain the results in terms of the study objectives. Use this section to tie all the different results together; **do not** automatically break it up into the same divisions as the results section. The discussion should be partitioned by the **objectives** of the work. A helpful technique is to restate the objective at the beginning of each section, and then go on to explain how the results meet, partially meet, or fail to meet this objective. Another thing which should be woven into the discussion is some historical perspective, i.e., what has been the trend at this site over the past 3-5 years and how do the results fit into this trend. Remember that the disposal sites are not just isolated patches of ocean bottom (which we visit once a year), but are part of larger, dynamic oceanographic systems; the discussion should tend to develop this regionwide, long-term perspective. This is particularly true in Long Island Sound, where regionwide seasonal hypoxia, which can have profound effects on conditions we observe at the disposal sites, has been well documented in recent years.

3.6 The Conclusions

The conclusions section should briefly restate the major findings which have already been presented in the results or discussion sections. This is not the place to introduce any new ideas or make new recommendations—these should have already been presented and justified in the discussion section. You only want to recap the highlights of the report in this section. Remember that this section (or the executive summary) may be the only one

that some people read—it should be written so that anyone who reads it will understand the major findings of the study and have a solid sense of what was accomplished. Presenting bulleted information in the conclusion may be useful.

4.0 GENERAL RULES AND HELPFUL HINTS

The following general rules are based on editorial comments received from NED over the years. We have attempted to make decisions on those grammar and usage conventions which allow for choice. In these cases, we have referred to our suggestions as “preferred DAMOS usage.” Such consistency will give DAMOS reports a more uniform and recognizable look. In writing your reports, consider the decisions outlined here as your authoritative style guide. Consult the texts listed in Section 4.11 for cases not described below. Please bring any discrepancies or errors you should find to the attention of your technical editors.

4.1 Technical Terms and Preferred Word Choice

ABC

- Use “atomic absorption” NOT “adsorption.”
- Use “barge” rather than “scow.”
- Use “class intervals” rather than “categories” when referring to REMOTS® histograms.
- Note that 95 % confidence limits are the two numbers surrounding the mean (e.g., 100 with limits of 80 and 120).
- Note that a 95 % confidence interval is half the distance between the two (e.g., 100 \pm 20). (Use Microsoft® Word character set (\pm) Alt+0177.)
- Report confidence intervals as “100 \pm 20 (95 % C.I.).”
- As part of the bathymetric results, confidence intervals should be calculated for any statement concerning depth differences. These calculations are found in Contribution No. 60.

DEF

- Use “depth difference” or “volume calculation based on depth difference.” “Volume difference” is NOT a valid term.
- Use “depth difference chart” NOT “isopach chart.”
- Always use the terms “disposal,” “disposed,” and “disposal site.” Do NOT use negative terms like “dump,” “dumping,” or “dump site.”
- Use “disposal barge log” rather than “scow log.”
- The term “disposal site” is left in lower case if you are just talking about it in general terms, as in : “Conditions at the disposal site were worse than those at the reference area.”
- Be sure to distinguish carefully between the “disposal site” and individual “disposal mounds,” which occur within disposal sites. Do NOT use the word “site” if you

are referring to a region or area of bottom other than the officially designated disposal site. The term “disposal site” represents a legal boundary. Note that the following are NOT synonyms: disposal site, disposal mound(s), reference station(s), and reference area(s). Do NOT use “reference site.”

- Use the terms “dredged material” or “dredged sediment” when referring to that stuff on the substratum.

GHI

- Use the term “intervals” accurately. Note that boundary roughness histograms should have 0.5 cm intervals.

JKL

MNO

- Use MDL NOT IDL.
- Use “median OSI” on the distribution maps and for the frequency distributions.
- Use the term “midpoints” accurately. Note that RPD histograms should have 1 cm midpoints.
- The OSI statistical test is stated as the “Mann-Whitney U-test.”
- Use “OSI values” NOT merely “OSI or OSIs.”
- Refer to OSI values as “+9” NOT “OSI 9.”

PQR

- Use the terms “reference area” and “reference station” accurately. Reference area refers to an area around a defined navigational location for collection of reference data. A reference station is a survey-specific navigational point where reference data have been collected (usually on a grid around the center of a reference area).
- Always say “REMOTS® photos” or “REMOTS® photographs” instead of “REMOTS® images” or “imagery.”

STU

- The correct format for stating the size of a survey is: “1600 × 1600 m.”
- Use “the calculated sound velocity” NOT “the measured sound velocity.”
- Calculation of sound velocity (or speed of sound in seawater) is derived from CTD data NOT measured by the CTD.
- Use a lowercase italic “s” to indicate standard deviations.
- Use “substratum” when referring to a benthic surface, NOT “substrate,” which is a surface on which to culture bacteria.

- When reporting degrees (of temperature), include the scale. Use 1° C NOT 1°. Include a space between the symbols (American Chemical Society format).

VWXYZ

- Use “0.1 m² van Veen” NOT “0.1 m³.”

See also “Quick Reference Style Sheet: Preferred Word Choice and Usage” in Appendix III.

4.2 Reporting Dates and Expressing Quantities

4.2.1 Dates

Write out dates; do NOT use numerics such as 04/04/93. Dates should be written as follows:

23 July 1989
June 1994 (NOT June, 1994)
Summer 1994
July–August 1988 (NOT July–August, 1988)
13–15 October
at NLDS, 1988–1990
1980–82
In the late 1800s

Use the en dash to indicate a range of dates.

Note the following exceptions; do not use a dash with the prepositions “from” and “between”:

from July to August 1988 (NEVER from July–August 1988)
between 1988 and 1990 (NEVER between 1988–1990)

4.2.2 Numerals

Scientific usage. In mathematical, scientific, or technical text, physical quantities, such as distances, lengths, areas, volumes, pressures, and so forth, are expressed in figures. Always use metric units throughout DAMOS reports. Effective April 1, 1996, use kilometers rather than nautical miles.

16.67 kilometers

3 cubic meters

4 meters

8 grams

General usage. When employing numbers in other instances, a general rule is to spell one through nine. Use numbers from 10 on.

eight stations

34 stations

Abbreviations. If an abbreviation is used for a unit of measure, the quantity should always be expressed by a figure. Note that a space follows the numeral. Define any abbreviation that your reader is not likely to understand the first time you use it. It is not necessary to identify commonly understood abbreviations. Your awareness of your reader should guide your decisions.

3 m³

4 m

8 g

The following preferred abbreviations are commonly used in DAMOS reports.

18 cm·s⁻¹ (centimeters per second)

2 mg·l⁻¹ (milligrams per liter)

Symbols. If a symbol is used instead of an abbreviation, the quantity is expressed by a figure.

5% or five percent NEVER five %

Signed quantities. There should be NO space between the sign and the quantity.

≤10 cm

±2

Note the proper spacing when representing latitude/longitude coordinates. Also, give positions in degree/decimal minutes (NOT in integer degree/minute/second coordinates). Leave one space between minutes and compass direction.

43°37.5' N NOT 43°37'30" N

Forming plurals. Form the plurals of figures by adding an s.

1980s NOT 1980's

4.3 List of Acronyms and Initialisms

Both acronyms and initialisms are forms of abbreviated terms that are commonly used in scientific and technical writing. Acronyms are initialisms that can be, and often are, pronounced as one word, as in DAISY. In DAMOS reports, identify an abbreviated term the first time you use it. Also define an acronym the first time it is used in the Discussion section. Do so by first defining the term and then following the definition with the abbreviation in parentheses, such as “Scientists at Science Applications International Corporation (SAIC) realized the DAMOS Program would benefit from an outside peer review.” You may then use the abbreviation alone to refer to the term. See the Quick Reference Style Sheet: List of Acronyms and Initialisms in Appendix III for a list of abbreviated terms commonly used in DAMOS documents.

We intend to keep this list updated, so please submit to your technical editors any new terms and their proper definition that you use in your writing. See sections 5.35-5.38 in *Science and Technical Writing: A Manual of Style* and sections 6.9; 7.152-53; 14.15; and 18.97 in *The Chicago Manual of Style* for more information on the use of acronyms.

4.4 Equipment Names

Be consistent in naming technical equipment used in DAMOS reports. Be sure to include registered trademarks when appropriate. (Microsoft® Word character set Ctrl+Alt+R.)

Equipment names that contain the registered trademark symbol:

- Del Norte Trisponder®
- Hewlett-Packard 9920® series computer
- ODOM Echotrac® recorder

- REMOTS® sediment-profile camera

Equipment names that do NOT use the registered trademark symbol:

- LORAN-C
- Sea-Bird SEACAT SBE 19-01 CTD probe
- Subbottom Profiler by Precision Signal, Inc. X-Star Model SB-216 Full Spectrum Digital
- 0.1 m² Young-modified van Veen grab sampler
- YSI Model 58 dissolved oxygen probe

Please keep your technical editors advised of any additions or changes to this equipment list. We intend to update it periodically.

4.5 Capitalization Guidelines

Employ consistent capitalization. Use capitals only for proper nouns and for their usual roles in titles, captions, and headings, and at the beginning of sentences and some list items.

- For locations, use capitals to indicate direction.

100E (to indicate 100 meters east of center)
100S (to indicate 100 meters south of center)
CTR (to indicate center)
- When referring to successional stages, use a capital “S” and a roman numeral, as in Stage I, Stage I on II, etc.
- Capitalize the “S” in station, as in Station 200N.
- Do NOT capitalize the “s” when referring to stations in general. (Stage I organisms were found at all stations north of the center.)

For capitalization of lists, see Section 4.9 in this guide.

See also Quick Reference Style Sheet: Capitalization/Spelling/Hyphenation/Italics.

4.6 Spelling Rules

- Commonly Misspelled Words:

absorption	maintenance	recur
accommodate	parallel	separate
adsorption	preceding	sieve
all right	preventive	succeed
exceed	proceed	supersede

(Note that absorption refers to “an assimilation or taking up by capillary, osmotic, chemical, or solvent action.” Adsorption means “a taking up, through physical or chemical forces, by the surface of solids or liquids.”)

- Add a simple “s” to letters or numbers used as words:

PAHs
PCBs
1980s

Consult the *Merriam-Webster's Collegiate Dictionary*, 10th edition, for particular spelling questions that can't be resolved by referring to this style guide or the Quick Reference Style Sheet: Capitalization/Spelling/Hyphenation/Italics.

You should also use your “spelling checker.” Remember, however, that the spelling checker will not catch misspellings that result in another word (i.e., casual/causal).

General spelling rules are discussed in sections 4.1-4.75 in *Science and Technical Writing: A Manual of Style* and in sections 6.1-6.81 and Table 6.1 of *The Chicago Manual of Style*.

4.7 Hyphenation and Spelling (also called treatment of compound words, compound modifiers, and unit modifiers in style manuals)

- Hyphenate compound modifiers when they function as adjectives.

fine-grained sediment
sediment-profile camera

But:

grain size

- Do NOT insert a hyphen in a unit modifier if the first element is a comparative or superlative.

finer grained sediments

- Do NOT hyphenate compound modifiers with adverbs ending in “ly”.

conventionally moored buoy

- Do NOT hyphenate compass directions.

northwest

southeast

- Do NOT hyphenate prefixes such as pre, post, or multi, unless confusion as to word meaning would result.

predisposal

postsurvey

multiparametric

But (depending on meaning):

multi-ply and multiply

re-cover and recover

- Do NOT hyphenate unit modifiers that serve as predicate adjectives (objects or complements of linking verbs).

The procedure is well known.

But:

the well-known scientist

Most questions regarding the correct form of compound words can be resolved by consulting the DAMOS style guide or a dictionary. However, when no “authoritative” spelling can be found, follow the general rules outlined in sections 3.83-3.105 of *Science and Technical Writing: A Manual of Style* and sections 6.24-6.32 and Table 6.1: A Spelling Guide for Compound Words in *The Chicago Manual of Style*.

Also, consult the Quick Reference Style Sheet: Capitalization/Spelling/Hyphenation/Italics in Appendix III.

4.8 Punctuation

Follow conventional rules of punctuation in DAMOS documents. Many punctuation decisions are arbitrary. Where options exist, we have identified the preferred DAMOS usage. Some general rules are outlined below.

Comma

- In a series of three or more terms with a single conjunction, use a comma after each term except the last.

Iron, copper, zinc, and cadmium were elevated at Station 200N.

- A comma follows an introductory adverbial clause.

Since monitoring began in 1982, the site has been visited annually.

- Do NOT use a comma to set off an adverbial clause that follows the main (independent) clause of a sentence.

The site has been visited annually since monitoring began in 1982.

- Note: An independent clause is a group of words that has a subject and a verb. It expresses a complete thought, and it may stand alone as a complete sentence. A subordinate or dependent clause may NOT stand alone, even though it has a subject and a verb, because it does not express a complete thought and thus cannot be considered a complete sentence.

Comma and Conjunction

- When two independent clauses are joined by a conjunction, a comma precedes the conjunction.

There is little finfishing activity within the site, and the nearest leased oyster grounds are approximately 3 km north of the area.

Parentheses

- Brackets should be used as parentheses within parentheses. For example, note the following phrase:

(GPS, Differential GPS [DGPS], as well as speed, course, and heading input)

Semicolon

- Two independent clauses may also be joined by a semicolon.

A monitoring cruise was conducted immediately after the passage of Hurricane Gloria; it appeared that the storm produced local redistribution of sediment.

Semicolon and Conjunction

- When the independent clauses of a compound sentence are very long or have internal punctuation, a semicolon is generally used before the coordinate conjunction. (Note: A compound sentence is a sentence that contains two or more independent clauses. Internal punctuation refers to the presence of commas or other marks of punctuation within one or both of the independent clauses.)

The convenient location and, perhaps more importantly, the protected waters at CLIS resulted in the selection of this site for several capping experiments, conducted during fall monitoring cruises; and, to date, six capping projects have been completed at the site.

Semicolon, Transition Word, and Comma

- The two independent clauses of a compound sentence may be connected by transitional words. These are words that show the relation between the two

independent clauses. They are always preceded by a semicolon and usually are followed by a comma.

A transect study was conducted in 1987; consequently, possible contaminant resuspension and transport were analyzed.

Use of the Dash

There are several kinds of dashes, differing from one another according to length. Each kind of dash has its own uses. Do not confuse the em dash, the en dash, and the hyphen (also called the dash). The en dash is one-half the length of the em dash and is longer than a hyphen.

em dash: — en dash: – hyphen: -

The em dash is used in setting off parenthetical elements. Use it to indicate a sudden break in thought or to introduce and conclude a short enumeration. Em dashes differ from commas and parentheses in that em dashes direct the reader's attention to what has been set off. (For example: Commercial finfish dragging—impractical at CADS due to the confined nature of the trough—takes place only on level bottoms offshore of the disposal area.) To access the em dash in Microsoft® Word, use the code Alt+Ctrl+Num-.

The en dash (Ctrl+Num-) is used in expressing ranges. (For example: May–June 1988)

The hyphen is discussed in Section 4.7 of this guide. See sections 3.1-3.139 in *Science and Technical Writing: A Manual of Style* and sections 5.1-5.109 in *The Chicago Manual of Style* for more information on punctuation.

4.9 Lists

There are two types of lists: lists within a sentence and vertical lists.

Capitalization of Lists

- Lists within a sentence generally are NOT capitalized.

The report consists of (1) sampling methods, (2) results, (3) conclusions, and (4) discussion.

- For the sake of consistency, capitalize vertical lists (bulleted or numbered) in DAMOS documents, whether they consist of complete sentences or not.

The report consists of four sections:

- Sampling methods
- Results
- Conclusions
- Discussion

Punctuation of Lists

- Internal punctuation of vertical lists can vary. However, in DAMOS reports, if the introductory clause preceding the list is grammatically complete, use a colon and punctuate the list as running text. Include terminal punctuation (the period).

The two surveys were designed with similar objectives:

- To map the areal extent of dredged material,
 - To assess the possible transport of dredged material during disposal operations, and
 - To evaluate the response of the benthic environment.
- If the introductory clause is NOT grammatically complete, do NOT use a colon and do NOT include end punctuation.

The objectives were to

- Map areal extent
 - Assess transport of material out of the area
 - Evaluate benthic recolonization
- In identifying items within a vertical list, you may use bullets or numbers. However, unless the list indicates order of importance or procedure, use bulleted lists in DAMOS documents. (In Microsoft® Word use Alt+0149 for the bullet symbol or create the list using the Microsoft® Word “bullets” button.)

Spacing of Lists

- Spacing between items in a list may vary from list to list but must be consistent within an individual list. In general, single space between items in a short list. Double space between items in a list that is long to provide more white space on the page. It usually looks best to double space between the phrase or clause that introduces a list and the first bulleted item.

4.10 Style Suggestions

To achieve consistency of style in DAMOS documents, we are including some general guidelines for stylistic and usage concerns.

Verb Tense

- Use past tense!

The mound had a radius of 300 meters.

The bathymetric survey was performed on 23 July 1989.

- Use past tense in figure legends and table captions.

Subject-verb Agreement

- Use “data” as a plural word.

These data are inconclusive.

- Use m³ as a singular collective noun.

Approximately 30,000 m³ was deposited.

Passive Voice

- Avoid overuse of the passive voice.

“The survey was conducted by SAIC on 23 July 1989” should be rewritten as “SAIC conducted the survey on 23 July 1989.”

- When referencing tables and figures, do NOT say “Figure 3-1 shows the RPD depths at the site.” Rather, a preferred technique is to reference a table or figure in parentheses after you make an active voice statement about the results or data being discussed.

The RPD depths in the eastern half of the site were less than those in the western half (Figure 3-1).

Accurate Word Choice and Diction

- Note that “since” refers to the passage of time; “because” indicates cause and effect.
- Do NOT use the word “impact” as a verb. “Impacted” means “packed firmly together.” The adjective “impacted” means “wedged together at the broken ends.”

4.11 Supplementary Texts

Primary style guide: Style Guide for the Preparation of DAMOS Documents

If your questions are not resolved, consult first:

Rubens, P., editor. 1992. Science and technical writing: a manual of style. New York: Henry Holt & Company.

And then:

University of Chicago Press. 1982. The Chicago manual of style. 13th ed. rev. Chicago: University of Chicago Press.

For further information and examples on references, see:

CBE Style Manual Committee. 1983. CBE style manual. 5th ed. Chicago: Council of Biology Editors, Inc. pp. 47–65.

Preferred dictionary:

Merriam-Webster, Inc. 1993. Merriam-Webster's collegiate dictionary. 10th ed. Springfield, MA: Merriam-Webster, Inc.

5.0 DEVELOPING GRAPHICS

The development of graphics for DAMOS reports has evolved rapidly with the usage of increasingly sophisticated graphics software. Graphics are powerful tools to convey complex data in a meaningful way. Creative graphics are extremely effective! Look for ways to combine graphically and clearly display different parts of the survey on one graphic when this will enhance comprehension. The content of these graphics should include, but not be limited to, the following figure descriptions. Formats for each type of graphic are suggested; however, these must be flexible as more precise and efficient methods are developed. Examples of all of these types of graphics are included in Appendix IV.

Standard Basemap Elements:

All figures of disposal site data should include a north arrow, a scale bar, disposal buoy(s), and be presented in latitude/longitude coordinates. The basemap should have the disposal site name as the upper title, and a subtitle representing the content of the figure (RPD, OSI, bathymetry, etc.). All disposal site boundaries, including the reference area boundaries, should be shown. Notation should be made on each basemap that reference areas are not represented to scale, along with arrows indicating the true location of each reference area relative to the disposal site.

Graphics normally found in a DAMOS report include

- Disposal Site Location Map

The Disposal Site Location Map should show a reference coastline relative to the location of the disposal area. Major cities should be noted, along with major harbors and/or rivers. A geographic reference (X km from defined point) should be included for each disposal site. Standard geographical references can be found in the DAMOS Disposal Site Management Plan (SAIC 1996).

- Station Designation Map

Each station should be represented by a standard symbol (filled triangle), including stations located at the reference areas. The name of the station should clearly be labeled. Maps should be labeled "Station Designation."

- Bathymetric Data Presentation

Bathymetric data are processed and preliminary plots are generated using SAIC's HDAS software. The bathymetric model is graphically represented, plotted to an HPGL (*.plt) file, and printed using Hewlett Packard Laser Plotter 2.3 software. The bathymetric models are then ported to text (*.txt) files and imported to Surfer® 6.0 Surface Mapping System. The Surfer® products can be annotated and printed directly or ported to another graphics program (e.g., Coreldraw®) for more detailed annotation or modification. These data include barge disposal positions retrieved from the DAMOS database, bathymetric contour plots, bathymetric volume difference plots, and bathymetric plots in 3-D.

- REMOTS® Data Presentation

REMOTS® data should be plotted spatially also using Surfer® 6.0 Surface Mapping System. As in bathymetric plots, these data can be printed directly or exported to another graphics program for detailed modification including contour lines of various REMOTS® parameters (i.e., sediment types, successional stage, etc.). In addition, frequency histograms of REMOTS® parameters can be produced using spreadsheet software (e.g., Quattro Pro®). The histograms can be plotted directly, or exported into a graphics file format. Finally, a standard DAMOS report will usually include the reproduction of a REMOTS® photograph, as described below.

Spatial distribution maps of REMOTS® parameters should be included if relevant to the conclusions of the report. Generally the following maps are included:

- Median OSI

Each station should have an OSI value next to the station symbol. Contours should be drawn delimiting the ≤ 6 OSI value. "IND" should be used on all stations where data were not obtained. The map should include a key indicating the meaning of IND and contour intervals. Optionally, a broken line can be used to show dredged material distribution. The title on the graphic should be "Median Organism-Sediment Index."

- Successional Stage

Each station symbol is changed to show the successional stage obtained using REMOTS® technology. A key should be included depicting the symbols and the stage(s) it represents:

KEY

Open Circle	Stage I only.
Filled Circle	Stage II only.
Open Triangle	Stations where Stage III assemblages are present. (Filled triangle is used for representing station designation ONLY.)
Open square	Combination of Stages described in the key.
Filled square	Combination of Stages described in the key.
IND	Indeterminate.

The filled triangle should be taken off and replaced with an IND when no successional stages are present. If possible, dredged material distribution can be contoured with a broken line. The title should be "Successional Stage."

- Mean Boundary Roughness

Each station should be labeled with a numeric boundary roughness value. The label "IND" should be used for all stations where no data can be applied. Contours delimit a boundary roughness value ≥ 2 cm. A broken line can be used to show dredged material distribution. A key depicting "IND" and the contour interval should be given. The graphic should be titled "Mean Boundary Roughness."

- Mean Apparent RPD Depth

Each station should be labeled with a numeric RPD value. "IND" should be used for all stations where no data can be applied. Contours delimiting an RPD value ≤ 3 cm should be used. A broken line can be used to show dredged material distribution. A key depicting "IND" and the contour interval should be given. The graphic should be titled "Mean Apparent RPD Depth."

- Grain Size Major Mode

All data are represented by different kinds of shading. The key should explain the various shadings used, followed by the grain size followed by the phi unit. Each station should have major mode and the appropriate shading that will be applied. A broken line can be used to show dredged material distribution. The graphic should be titled "Grain Size Major Mode."

- Dredged Material Distribution

A contour with 40% gray shading should show the extent of dredged material. Numeric values to indicate depth of surface sand cap layer should be given. Numeric values should indicate dredged material depth. A "+" after a number indicates dredged material is greater than prism depth. "IND" should be used for all stations where no data can be applied. A key depicting "IND," the shading, and the "+" should be given. The graphic should be titled "Dredged Material Distribution."

- Prism Penetration

Each station should be labeled with a numeric penetration value. Each station where no data were obtained should be indicated by "IND." A key depicting "IND" should be given. The graphic should be titled "Prism Penetration."

- REMOTS® Photos

These photos should be identified by the author as soon as possible! Once the photos are chosen, color slides are submitted to the production department which will have them produced into laser color copies for the original draft and final reports. Extra laser color copies should be kept in the archive for use in future copies of the report if and when requested. The laser color copies are pasted to figure legend pages by the production department when the report is finalized.

Important Notes

Care should be taken that the graphics in any given report are consistent, especially global elements such as north arrows, borders, type face, and place names. The other elements that are more subtle and therefore easier to overlook are the placing of contours and shaded areas. An example of this would be shading around a symbol to indicate a particular grain size. This shading could surround the symbol by a quarter inch. However, on another graphic, contours might bisect that same area or carry different parameters beyond that quarter inch.

6.0 SUMMARY

For a typical DAMOS monitoring survey, a series of events occurs from the initiation of the survey to final production of the report. The following is a typical chain of events:

1. Past monitoring reports and subsequent site activities and other relevant environmental events are reviewed.
2. Work Order is drafted, discussed, and finalized.
3. Work Order is put in place.
4. Field work is planned and conducted.
5. REMOTS® film is developed into negatives, either during the survey in the field or immediately following the survey.
6. REMOTS® prints are analyzed using the LMS and QA/QC'd by a senior scientist. Edits are made by the author.
7. Bathymetric data are processed using HDAS.
8. Base map is plotted showing station locations. Be sure to make the scale large or small enough to accommodate all of the stations and information that will go with each station.
9. The base map is made and turned over to the production department. The DAMOS Report Tracking Form is initiated, and the author begins to write text.
10. At this point the author has his/her text in rough form. The edited photos, bathymetric contour maps, and the reproduced base map are returned from the production department. The technical editor completes a developmental edit and signs the tracking form.
11. A meeting is scheduled to compare the graphics with the text and schedule a seminar.

12. Copies of corrected graphics along with the text can be used in seminars and the QA/QC technical review.
13. The author makes corrections to text and graphics with the help of the production department. The author signs the DAMOS Report Tracking Form.
14. The final draft report is submitted to the technical editor for final copy edit. The technical editor signs the DAMOS Report Tracking Form.
15. The final draft report is reviewed and given final QA/QC by a senior scientist. The senior scientist signs the DAMOS Report Tracking Form. If edits are required, the production department completes the final copy.
16. The author **must approve** final production copy and attach a submittal letter to NED before the report is sent.

References

SAIC. 1996. DAMOS disposal site management plan. SAIC Report No. 364. Final report submitted to US Army Corps of Engineers, New England Division, Waltham, MA.

APPENDIX I

EXAMPLE REPORT BODY SECTIONS

**MONITORING CRUISE AT THE
PORTLAND DISPOSAL SITE
JULY 1992**

18 June 1993

Contract No. DACW33-90-D-0001
Work Order No. 16
SAIC Report No. C110

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- Figure 3-8. Successional stage values at the Portland Disposal Site and reference areas, July 1992
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- Figure 3-10. Surface sediment density ($\text{g} \times \text{cc}^{-1}$) for the Portland Disposal Site
- Figure 3-11. Zinc values in surface sediments at the Portland Disposal Site, July 1992

Figure 3-12. Lead values in surface sediments at the Portland Disposal Site, July 1992

Figure 3-13. Copper values in surface sediments at the Portland Disposal Site, July 1992

Figure 4-1. Barge disposal release points at the Portland Disposal Site, October 1991 to June 1992

Figure 4-2. Accumulation of sediment, distribution of dredged material, and barge release locations at the Portland Disposal Site

Between October 1991 and June 1992, a capping project was conducted at the Portland Disposal Site as part of the Disposal Area Monitoring System (DAMOS) Program. Fine-grained dredged material from the U.S. Coast Guard project in South Portland (13,270 m³) was capped with cleaner fine-grained sediment from the same project (29,330 m³), as well as with sandy material from the Northeast Petroleum project (21,701 m³).

Science Applications International Corporation (SAIC) conducted a monitoring cruise at the Portland Disposal Site in July 1992. The survey was designed to map the areal extent of dredged material at the site, to determine the effectiveness of the capping operation, and to obtain sediment chemistry data on the cap and at the reference areas. The field work included a REMOTS® sediment-profile survey, a bathymetric survey, an acoustic sediment density study, and sediment sampling for chemistry and grain size.

Based on the REMOTS® survey, the areal extent of dredged material at Portland ranged from 200 m west of the disposal buoy to 700 m southwest of the buoy location. The bathymetric survey, when compared to the previous bathymetric survey in January 1989, showed accumulations up to 0.75 m thick within 200 m of the buoy. The comparison of the 1989 and 1992 bathymetric surveys also indicated an area of accumulation 500 m south of the buoy. This corresponded to the southernmost detection of dredged material from the REMOTS® survey.

The acoustic sediment density study at the Portland Disposal Site highlighted possible effects of bottom currents on sediment grain size. At the peak of the disposal mound, sediment densities increased indicating a greater percent of sandier material. The sandier cap material had been disposed over the whole mound at the same time as finer grained cap material. Since the greater densities were found only at the apex of the mound, the increase in density may have been due to winnowing of the finer grained size fractions at the peak of the mound.

The sediment chemistry analysis from the surface of the cap as well as the reference areas verified the effectiveness of the cap in isolating contaminants. Comparing the metals and polycyclic aromatic hydrocarbons (PAHs) baseline chemistry from the reference areas with the National Oceanographic and Atmospheric Administration (NOAA) National Status and Trends Program (NS&T) data for the Gulf of Maine showed that the reference areas are well within the ambient values for metals and PAHs in the area.

1.0 INTRODUCTION

Sample Draft Report Body

1. The Portland Disposal Site is located in Bigelow Bight, approximately 7.1 nmi east of Cape Elizabeth, Maine (Figure 1-1). It is one of nine regional dredged material disposal sites in New England managed by the US Army Corps of Engineers, New England Division (NED) as part of the Disposal Area Monitoring System (DAMOS) Program. The site is a 1 nmi square with sides running true north-south and east-west, centered at 43°34.1' N, 70°02.0' W. It is characterized by a flat, sandy valley, surrounded by rocky outcrops. Water depths range from 42 m on the hard rock ridges to 64 m in the valleys.
2. The Portland Disposal Site was first used for the disposal of dredged material in 1979. Since then, it has been periodically monitored as part of the DAMOS Program.
3. In January 1989, a bathymetric survey and a REMOTS® survey were conducted at the site. From January 1989 to April 1991, 17,797 m³ of dredged material was released at the Portland Disposal Site buoy location (43°34.27' N, 70°01.96' W). Most of this material came from the Portland International Terminal and the Royal River Boatyard.
4. Next in the series of disposal events was a capping project begun at the Portland Disposal Site in October 1991. From October 1991 through January 1992, 13,270 m³ of material that was classified as unsuitable for open ocean disposal was released at the site.

2.0 METHODS

Sample Final Report Body

The July 1992 survey at the Portland Disposal Site was designed to map the extent of dredged material at the site, to determine the effectiveness of the capping operation, and to obtain sediment chemistry data onsite and at the reference areas. To accomplish this, SAIC conducted a bathymetric survey, a REMOTS® sediment-profile survey, an acoustic sediment density study, and sediment sampling for chemistry and grain size.

2.1 Bathymetry and Navigation

The precision navigation required for all field operations was provided by the SAIC Integrated Navigation and Data Acquisition System (INDAS). This system uses a Hewlett-Packard 9920® series computer to collect position, depth, and time data for real-time navigation. Contribution No. 60 (Parker and Revelas 1989) contains a detailed description of INDAS and its operation. Positions were determined to an accuracy of ± 3 meters from ranges provided by a Del Norte Trisponder® system. For the present survey, shore stations were established at known benchmarks: Cape Elizabeth Light (43°33.959' N, 70°12.034' W) and Portland Head Light (43°37.381' N, 70°12.502' W).

The July 1992 Portland bathymetric survey was set up over the same area used in January 1989. The 900 × 1100 m area consisted of 45 lanes oriented east and west with 25 m lane spacing. An ODOM DF3200 Echotrac® Survey Recorder with a narrow-beam 208 kHz transducer recorded depth to a resolution of 3.0 cm (0.1 ft) as described in DAMOS Contribution No. 48 (SAIC 1985). At the beginning of the survey, a surface-to-bottom cast of a Sea-Bird Electronics, Inc., Model SBE 19-01 conductivity, temperature, and depth (CTD) profiler was done to obtain accurate speed of sound data for the analysis. Analysis of the bathymetric data was conducted using the Hydrographic Data Analysis System (HDAS). All depth values were converted to Mean Low Water (MLW) after compensating for vessel draft and tidal fluctuations that occurred while surveying. During analysis, position and depth data were checked to identify and eliminate any outlying values before producing an accurate contour plot.

2.2 REMOTS® Sediment-Profile Photography

A REMOTS® survey was conducted at the Portland Disposal Site and reference stations on 22 and 23 July 1992. The orthogonal REMOTS® sampling grid at the disposal site was designed to map the areal extent of the dredged material deposit and to confirm predictions about benthic recolonization. Forty-two stations were surveyed at the disposal site.

APPENDIX II

EXAMPLE DAMOS REPORT TRACKING FORM

DAMOS REPORT TRACKING FORM

Report Title: _____

SAIC Report No. _____

Author: _____

Charge #: _____

Draft Due: _____

Reviews

	Sign	Date
Technical Editor (developmental edit)	_____	_____
Revision By Author	_____	_____
Senior Staff	_____	_____
Technical Editor (final draft copy)	_____	_____
Author's Final QA/QC of draft production copy	_____	_____

Draft Submitted to USACE on _____ (copy of submittal letter attached)

Production - 5 bound copies, 1 with original photos for submission to NED
original unbound for SAIC archive, 1 copy for SAIC in-house library _____

NED/USACE Review Letter Received _____ (copy of letter attached)

Final Due: _____

Reviews

	Sign	Date
Technical Editor (developmental edit)	_____	_____
Revision By Author	_____	_____
Senior Staff	_____	_____
Technical Editor (final copy)	_____	_____
Author's Final QA/QC (of final production copy)	_____	_____

Final Submitted to USACE on _____ (copy of submittal letter attached)

Production - 1 unbound copy with original photos and 1 diskette with all text, table, and
figure files for submission to NED
original unbound for SAIC archive, 1 copy for SAIC in-house library _____

APPENDIX III

QUICK REFERENCE STYLE SHEETS

**QUICK REFERENCE STYLE SHEET
PREFERRED WORD CHOICE AND USAGE**

<p style="text-align: center;"><u>ABC</u></p> <ul style="list-style-type: none"> • Use approximately NOT ca. • Use bathymetric survey NOT bathymetry survey • Use contaminant levels NOT contamination levels • Use contaminated NOT spoiled • Use chemical analyses NOT chemistry analyses 	<p style="text-align: center;"><u>DEF</u></p> <ul style="list-style-type: none"> • Use depth difference or volume calculation based on depth difference NOT volume difference • Use disposed NOT dumped NOT disposed of • Use depth difference chart NOT isopach chart • Use dredged sediment NOT dredged sediments • Use disposal barge NOT scow • Use disposal barge log NOT scow log • Use dredged material NOT dredged materials
<p style="text-align: center;"><u>GHI</u></p> <ul style="list-style-type: none"> • Use grain size • Use HMW PAH values • Use indeterminate NOT indeterminant 	<p style="text-align: center;"><u>JKL</u></p> <ul style="list-style-type: none"> • Use LMW PAH values
<p style="text-align: center;"><u>MNO</u></p> <ul style="list-style-type: none"> • Use median OSI on the distribution maps and for the frequency distribution • Use off the mound NOT off of the mound 	<p style="text-align: center;"><u>PQR</u></p> <ul style="list-style-type: none"> • Use PAHs • Use PCBs • Use “the disposal buoy was redeployed” NOT moved • Use “replicate values were within one standard deviation of the mean” NOT from the mean
<p style="text-align: center;"><u>STU</u></p>	<p style="text-align: center;"><u>VWXYZ</u></p>

QUICK REFERENCE STYLE SHEET
CAPITALIZATION, SPELLING, HYPHENATION, and ITALICS

<p style="text-align: center;"><u>ABC</u></p> <ul style="list-style-type: none"> • CSDS <p>NOT Cornfield Shoals NOT CORN NOT CORNFIELD</p>	<p style="text-align: center;"><u>DEF</u></p> <ul style="list-style-type: none"> • DAMOS Program <p>NOT DAMOS program</p> <ul style="list-style-type: none"> • dry-sieving • far-field impacts • fine-grained material • finer grained deposits • finfish • follow-up monitoring
<p style="text-align: center;"><u>GHI</u></p> <ul style="list-style-type: none"> • grain size • <i>in situ</i> 	<p style="text-align: center;"><u>JKL</u></p> <ul style="list-style-type: none"> • For location, use capital letters to indicate direction (100E, 100S, CTR) <p>NOT 100e, ctr</p> <ul style="list-style-type: none"> • LORAN-C • long-term effectiveness
<p style="text-align: center;"><u>MNO</u></p> <ul style="list-style-type: none"> • major mode, NOT major-mode • Mann-Whitney U-test • Organism-Sediment Index • multiparametric • nearshore • near-bottom • near-field impacts • near-surface values • northeast • offshore waters • open-water disposal • in open water 	<p style="text-align: center;"><u>PQR</u></p> <ul style="list-style-type: none"> • PDS <p>NOT Portland NOT PORT</p> <ul style="list-style-type: none"> • postdisposal • predisposal • RDS <p>NOT Rockland NOT ROCK</p> <ul style="list-style-type: none"> • regionwide • REMOTS® sediment-profile survey • RPDs
<p style="text-align: center;"><u>STU</u></p> <ul style="list-style-type: none"> • sediment-profile camera • short-term impacts • side-scan sonar • silt/clay sediments, NOT silt-clay • small-scale surface boundary roughness • southwest • species name - italics, NO underline (i.e., <i>Nephtys</i>) • Stage I • Station 100N • Stellwagen Basin • taut-wire moored buoy • three-dimensional bathymetric plot • tubicolous • upland • the user-oriented system 	<p style="text-align: center;"><u>VWXYZ</u></p> <ul style="list-style-type: none"> • wet-sieved

QUICK REFERENCE STYLE SHEET
LIST OF DISPOSAL SITES

BBDS	Buzzards Bay Disposal Site
CADS	Cape Arundel Disposal Site
CCBDS	Cape Cod Bay Disposal Site
CLIS	Central Long Island Sound Disposal Site
CSDS	Cornfield Shoals Disposal Site
MBDS	Massachusetts Bay Disposal Site
NLDS	New London Disposal Site
PDS	Portland Disposal Site
RDS	Rockland Disposal Site
WLIS	Western Long Island Sound Disposal Site

Note: CLIS stands for Central Long Island Sound Disposal Site,
NOT Central Long Island Sound

Therefore, it is redundant to say: “Approximately 20,000 m³ was disposed at the CLIS Disposal Site.”

Preferred usage is: “Approximately 20,000 m³ was disposed at CLIS,” or
“Approximately 20,000 m³ was disposed at the Central Long Island Sound Disposal Site.”

Avoiding use of the article “the” in combination with the proper noun (the CLIS) is your best strategy.

QUICK REFERENCE STYLE SHEET
LIST OF HISTORICAL DISPOSAL SITES

BFG	Boston Foul Ground
BREN	Brenton Reef Disposal Site
CLEVE	Cleveland Ledge Disposal Site
FADS	Foul Area Disposal Site
IWS	Industrial Waste Site

QUICK REFERENCE STYLE SHEET LIST OF ACRONYMS AND INITIALISMS

AF	accumulation factor (plural AFs)
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
BRAT	Benthic Resources Assessment Technique
CLIS	Central Long Island Sound Disposal Site
CTD	conductivity, temperature, and depth
DAISY	Disposal Area In situ System
DAMOS	Disposal Area Monitoring System (use as DAMOS Program)
DDMU	Digital Distance Measuring Unit
DO	dissolved oxygen
EPA	Environmental Protection Agency
FVP	Field Verification Program
GERG	Geochemical and Environmental Research Group (College Station, TX)
GIS	Geographic Information Systems
HDAS	Hydrographic Data Analysis System
HPAH	high molecular weight polycyclic aromatic hydrocarbon
INDAS	Integrated Navigation and Data Acquisition System
LLSS	Laser Linescan System
LPAH	Low Molecular Weight polycyclic aromatic hydrocarbon
MBDS	Massachusetts Bay Disposal Site
MQR	Mill-Quinnipiac River Disposal Mound
NED	New England Division
NERBC	New England River Basin Commission
NLON	New London Disposal Site
NOAA	National Oceanic and Atmospheric Administration
NS&T	National Status and Trends Program
OSI	Organism-Sediment Index
PAH	polycyclic aromatic hydrocarbon
PCA	principal components analysis
PCBs	polychlorinated biphenyls
PHCs	petroleum hydrocarbons
PINSS	Portable Integrated Navigation and Survey System
REMOTS®	Remote Ecological Monitoring of the Seafloor
RPD	redox potential discontinuity
RSAG	Regional Scientific Advisory Group (formed by NED)
SACS	Sediment Acoustic Characterization System
SAIC	Science Applications International Corporation
TAC	Technical Advisory Committee (for DAMOS)
TBP	Theoretical Bioaccumulation Potential
TOC	total organic carbon
TRPH	total recoverable petroleum hydrocarbon
USACE	US Army Corps of Engineers
WLIS	Western Long Island Sound Disposal Site

QUICK REFERENCE STYLE SHEET MICROSOFT® WORD CHARACTER SET STROKES

Microsoft® Word provides the user with a symbol chart which can be accessed by choosing the Insert Symbol menu. All symbols are provided in the chart. Some symbols also can be accessed using certain keystrokes. See some examples below.

®	ALT+CTRL+R	registered trademark
•	ALT+0149	small bullet
-	CTRL+NUM-	en dash (for use in ranges)
—	ALT+CTRL+NUM-	em dash (for use in setting off parenthetical phrases)
±	ALT+0177	plus or minus sign

APPENDIX IV

EXAMPLE GRAPHICS

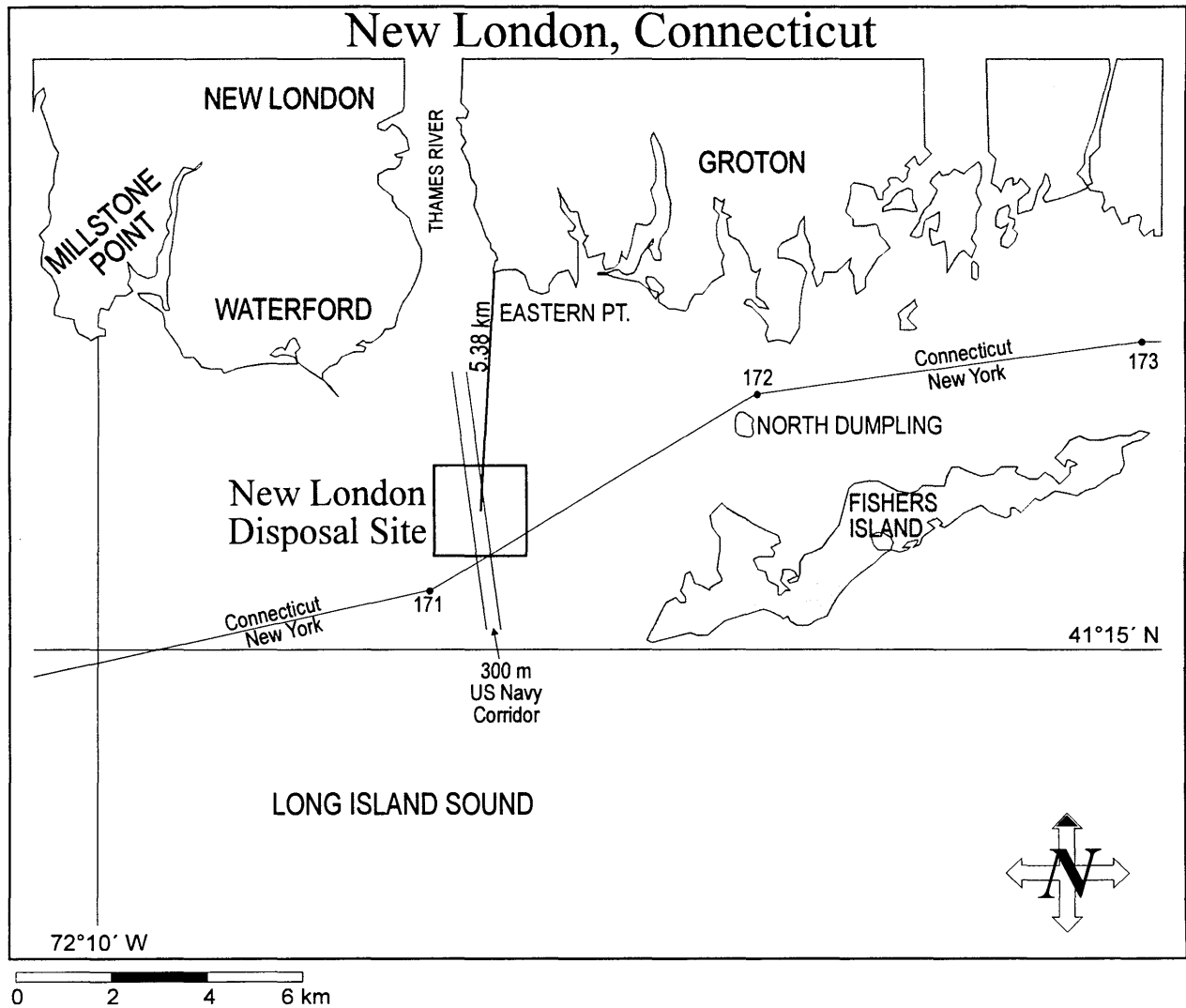


Figure 1-1. Location of the New London Disposal Site in reference to Eastern Point, Groton, CT

New London Disposal Site
August 1995
Survey Area and Grids

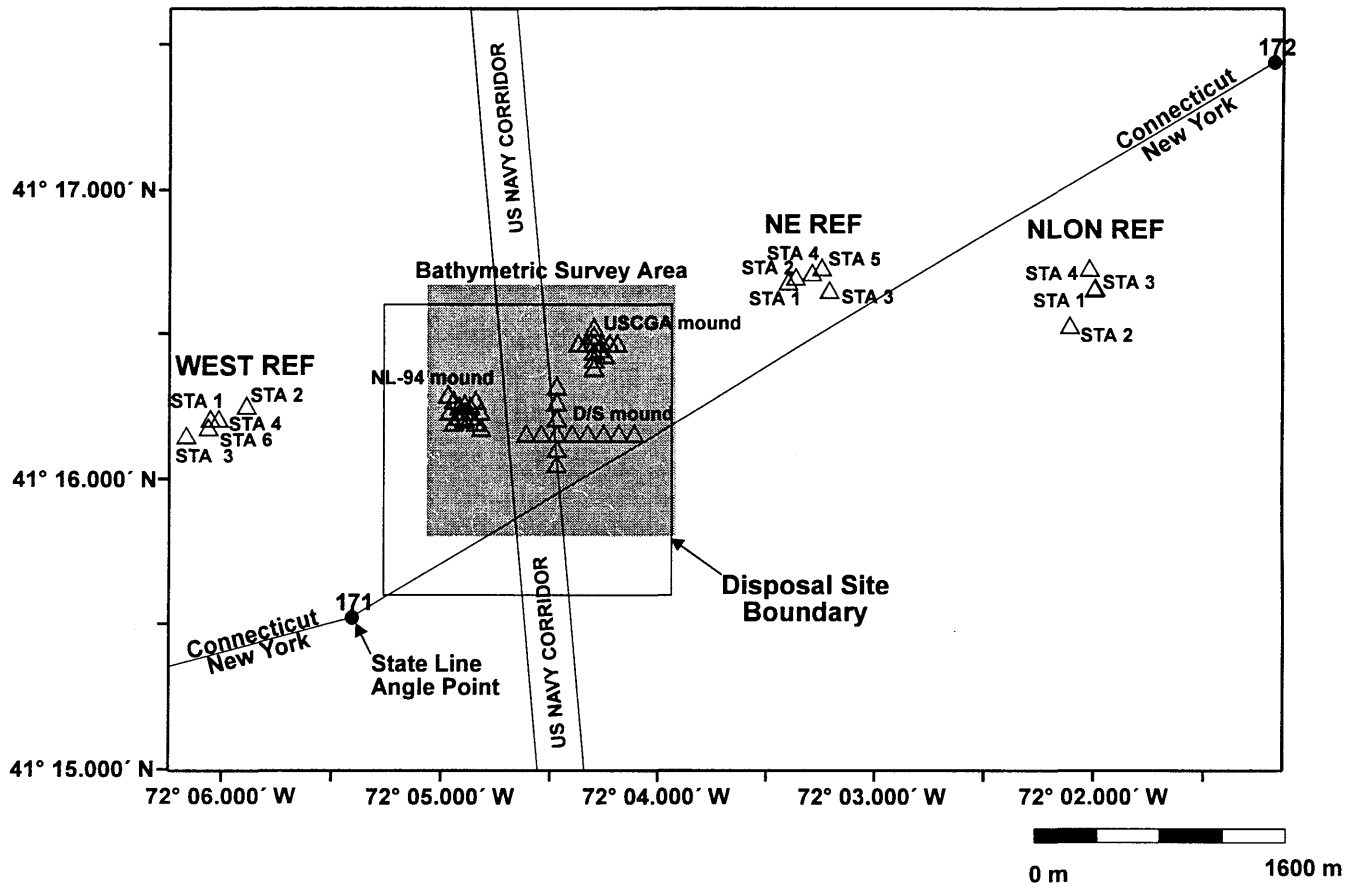


Figure 2-1. Chart of bathymetric survey area and REMOTS® stations relative to the New London Disposal Site boundaries, US Navy corridor, and New York-Connecticut state line

New London Disposal Site

August 1995 Bathymetry

1600 m X 1600 m Survey Area

Corrected to MLLW

NAD 27

Depth in meters

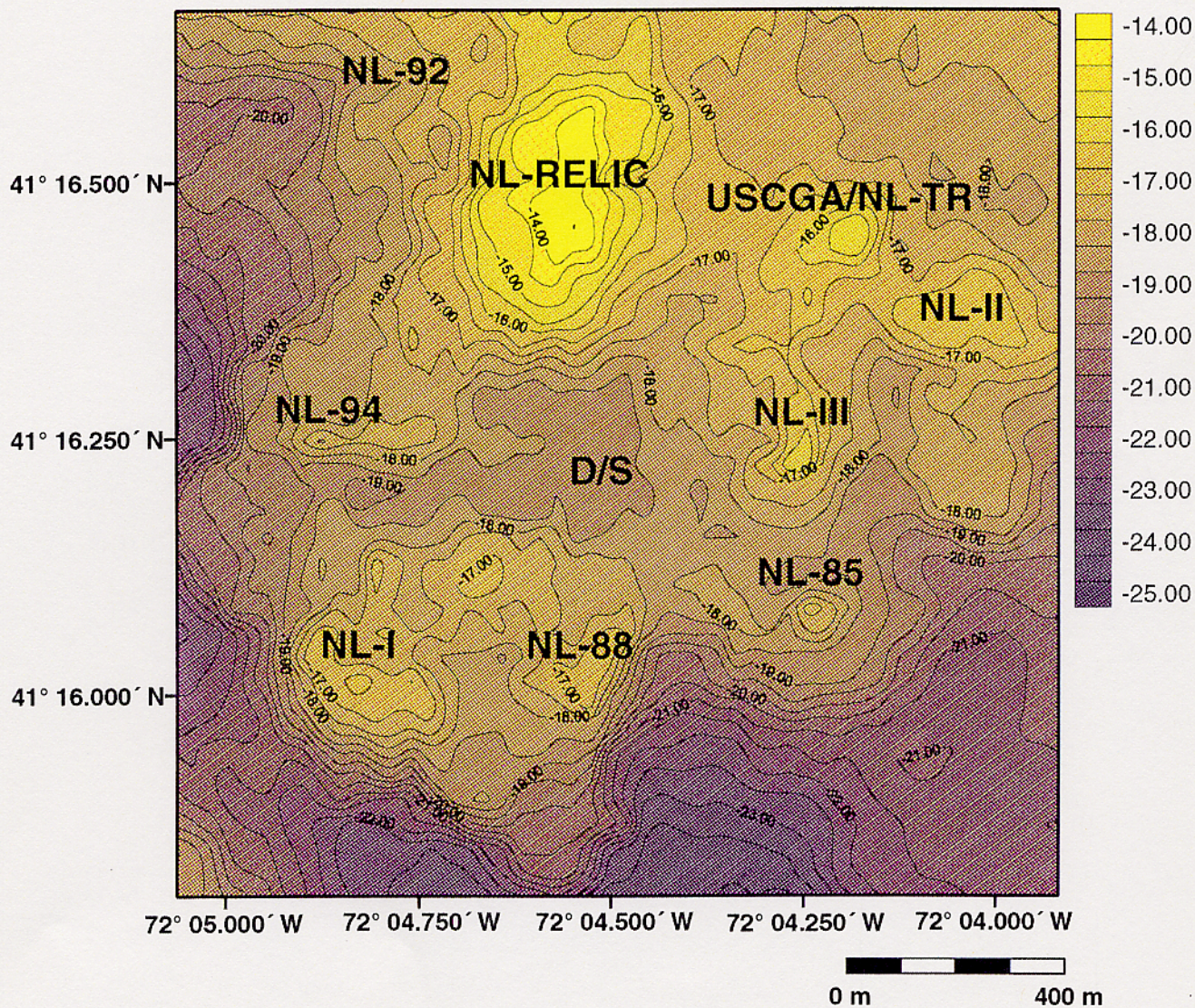


Figure 3-2. Bathymetric chart of the 1600 m × 1600 m survey area, August 1995 results, 0.5 m contour interval

Apparent RPD at FVP, 1991-95

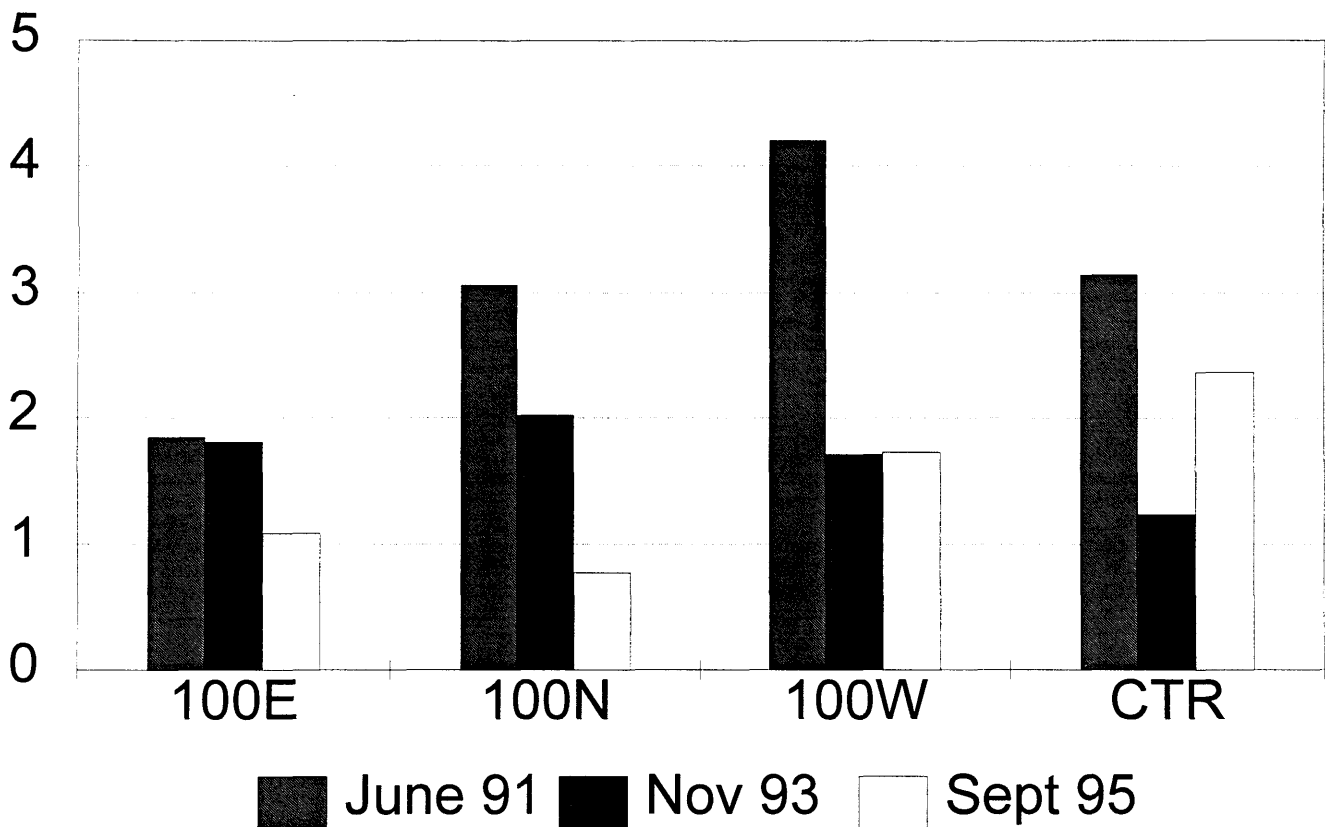


Figure 4-2. Histogram displaying recorded RPD calculations from June 1991, November 1993, and September 1995 at stations 100E, 100N, 100W, and CTR over the FVP disposal mound